

**U.S. Environmental Protection Agency
Scientific Integrity Program**

**Inquiry Report and Determination for Questions Involving
Authorship in OAR/OAQPS (Allegation 20.11)**

Background on scientific integrity

The U.S. Environmental Protection Agency (EPA) is dedicated to preserving the integrity of the scientific and scholarly activities it conducts and that are conducted on its behalf. The EPA Scientific Integrity Policy¹, dated February 2012, provides principles and standards to ensure scientific integrity in the conduct, use, and communication of science. When this policy is not adhered to, or is circumvented, the robustness of EPA science and the trust in the results of our scientific work can be impacted, causing a loss of scientific integrity. Loss of scientific integrity is the result of a deliberate action by an employee that compromises the conduct, production, use of scientific and scholarly activities and assessments. EPA strives to prevent loss of integrity in the performance of scientific and scholarly activities or in the application of science in its decision making.

Allegations of the loss of scientific or scholarly integrity are submitted to the EPA's Scientific Integrity Official (ScIO). Three criteria are considered when establishing a loss of scientific integrity:

- a. There is a significant departure from accepted practices or established procedures;
- b. The actions causing the loss of integrity are committed intentionally, knowingly or recklessly; and,
- c. The allegation is proven by a preponderance of evidence.

When the Scientific Integrity Program finds a violation, it issues recommendations to safeguard the science. When it finds no violations but believes it can assist the participants in advancing scientific integrity considerations, the Scientific Integrity Program provides advice.

Origin of this report

The Scientific Integrity Official launched the inquiry that is the subject of this report in response to a request from [REDACTED], [REDACTED] in EPA's Office of Air and Radiation (OAR). On February 10, 2020, [REDACTED] presented a set of questions to the Scientific Integrity Official in connection with an allegation of a potential loss of scientific integrity made by [REDACTED], an employee who alleges that [REDACTED] name was improperly removed from a journal article before it was published. The journal article in question is titled [REDACTED]
[REDACTED]

¹ https://www.epa.gov/sites/production/files/2014-02/documents/scientific_integrity_policy_2012.pdf
[REDACTED]

██████████ asked the Scientific Integrity Program to investigate this allegation and to address the following questions:

1. Was ██████████ name ever listed as an author?
2. If so, who removed it and why? Was there anything inappropriate about ██████████ name being removed from the article?

Method of inquiry

The inquiry focused specifically on the questions posed by ██████████. The Scientific Integrity Program contacted ██████████ and asked ██████████ to provide any materials relevant to this inquiry, including detailed descriptions of ██████████ role in the research and ██████████ responsibilities and contributions to the published article. The Scientific Integrity Program also contacted each of the EPA authors of the published article ██████████ and requested that they each provide a detailed description of their role in the research and their responsibilities and contributions regarding this article. The Scientific Integrity Program also requested that each author describe how final authorship and authorship order was determined for the article.

The Scientific Integrity Program received responses from each of the EPA authors. Additionally, the Scientific Integrity Program spoke with ██████████, OAQPS, who served as the first line supervisor for both ██████████ (lead author) and ██████████ while ██████████ was on detail to the Air Quality Modeling Group.

The Scientific Integrity Program based the conclusions outlined in this report on the information provided by the EPA staff detailed above.

1. Was ██████████ name ever listed as an author?

Yes. ██████████ name was listed as a potential author on early drafts of the manuscript. The initial draft of the manuscript was developed solely by the project lead, ██████████, and ██████████ name was included by ██████████. ██████████ indicated that ██████████ included ██████████ name as ██████████ assumed that ██████████ would substantively contribute to the development of the manuscript as the project progressed. A second (companion) manuscript was also developed during the same timeframe by ██████████ with the same initial author list (including ██████████). As the project progressed, the authors determined that the focus of the first manuscript would be limited to data and data availability (databases) and that the second manuscript would communicate the remaining aspects of the project. This second draft manuscript is still under development.

- 2(a). If so, who removed it and why?

The lead author, ██████████, removed ██████████ name from the manuscript. ██████████ indicated that he reviewed the authorship list as part of finalizing the manuscript prior to internal review and likely removed ██████████ name at that time. ██████████ indicated that ██████████ did provide comments on the draft but that ██████████ did not contribute substantively to the content and, therefore, ██████████ contributions did not warrant authorship. ██████████ instead included ██████████ in the Acknowledgments section. In addition to ██████████

■■■■■, two other coauthors commented that they did not recall ■■■■■ making any substantive contributions to the manuscript. ■■■■■ affirmed this conclusion and indicated that, while ■■■■■ contributions to the published article did not warrant authorship, ■■■■■ contributions to the second (unpublished) manuscript did warrant authorship.

2(b). Was there anything inappropriate about ■■■■■ name being removed from the article?

The determination as to whether there was “anything inappropriate” about the removal of ■■■■■ name is subjective. Instead, this inquiry focused on whether there was a lapse in scientific integrity in relation to the removal of ■■■■■ name from the publication.

EPA’s Scientific Integrity Policy indicates that all Agency employees must “appropriately characterize, convey, and acknowledge the intellectual contributions of others.” To assist with proper authorship practices, *EPA’s Best Practices for Designating Authorship*³ provides a set of objective criteria and general standards that can be used to prevent or resolve authorship issues and ensure the appropriate acknowledgment of individual contributions in EPA work products.

As noted in *EPA’s Best Practices for Designating Authorship*, an individual must meet each of the following three criteria to be designated as an author:

1. Made a substantial intellectual contribution.
2. Wrote or provided editorial revisions with critical intellectual content.
3. Approved the final version and agreed to be accountable for all aspects of the work.

EPA’s Best Practices for Designating Authorship also recommends that individuals who make a substantial contribution to a work product but do not meet the three authorship criteria outlined above be listed in an Acknowledgments section with a brief description of their role.

To investigate whether the removal of ■■■■■ name constituted a lapse in scientific integrity, the Scientific Integrity Program considered each of the three criteria outlined above:

1. Made a substantial intellectual contribution.

■■■■■ did not provide information to the Scientific Integrity Program that demonstrates that ■■■■■ made a substantial intellectual contribution to the manuscript. ■■■■■ was a member of the team working on the broader project of which this manuscript was a product. ■■■■■ did provide information substantiating ■■■■■ intellectual contributions to other aspects of the larger project and other products.

2. Wrote or provided editorial revisions with critical intellectual content.

■■■■■ did provide supporting documentation that indicates ■■■■■ provided comments on an early draft of the manuscript. Specifically, ■■■■■ provided screen shots of emails to ■■■■■ indicating that ■■■■■ provided comments on an early draft of the manuscript⁴ that was housed on a SharePoint site. The SharePoint site that originally housed this document is now empty. ■■■■■ reported that ■■■■■ could not provide a copy of ■■■■■ comments on the draft as ■■■■■ entered them directly into

³ https://www.epa.gov/sites/production/files/2016-09/documents/best_practices_designating_authorship.pdf

⁴ The draft titled “2018 oct 27”

the draft housed on the SharePoint site. [REDACTED] did not have a copy of [REDACTED] comments. Additionally, [REDACTED] provided several drafts of the manuscript that included edits/comments from the team; none of these drafts included comments from [REDACTED]. The Scientific Integrity Program therefore cannot verify whether [REDACTED] provided comments that imparted critical intellectual content. However, as noted above, three coauthors and [REDACTED] indicated that [REDACTED] contributions as a reviewer did not warrant authorship on this publication.

3. Approved the final version and agreed to be accountable for all aspects of the work.

When [REDACTED] detail ended in May 2019, [REDACTED] was no longer included in any discussions regarding the manuscript. As such, [REDACTED] was unaware that [REDACTED] name had been removed as an author or that the manuscript had been published. As [REDACTED] was no longer included in any discussions regarding the manuscript and no longer listed as an author, [REDACTED] was not afforded the opportunity to approve the final version of the manuscript or to be accountable for the work. As [REDACTED] was unable to fulfill this criterion through no fault of [REDACTED] own, this criterion will not be considered in this determination.

Determination

From the information collected, the Scientific Integrity Program concludes that [REDACTED] contributions to the article were appropriately recognized in the Acknowledgments section of the article and that there was no lapse in scientific integrity. The Scientific Integrity Program was unable to locate any supporting information to affirm that [REDACTED] fulfilled the authorship criteria outlined in *EPA's Best Practices for Designating Authorship*. [REDACTED] supervisor at the time and three coauthors of the article affirmed that [REDACTED] role in the manuscript did not warrant authorship.

However, *EPA's Best Practices for Designating Authorship* stresses that the most important best practice for authorship of EPA products is for authors to discuss responsibilities and authorship among participating individuals before a project begins and periodically as work progresses. Each of the authors of this article indicated that there had been no substantive discussions of authorship during the development of the published article and that [REDACTED] made the final authorship decisions. [REDACTED] affirmed this. [REDACTED] was not informed that [REDACTED] name had been removed from the author list or that the article had been published. The lack of open and straightforward communication with [REDACTED] concerning expectations, contributions and authorship (most importantly, the removal of [REDACTED] name from the author list) could be considered "inappropriate."

Evaluation of criteria

| Criteria for establishing a loss of scientific integrity | Evaluation |
|--|--|
| a. Significant departure from accepted practices | Unsubstantiated. This inquiry concludes that [REDACTED] contributions were appropriated recognized in the Acknowledgments section of the published article. |
| b. Committed intentionally, knowingly or recklessly | Unsubstantiated. While [REDACTED] name was intentionally and knowingly removed, it was removed in an effort to appropriately characterize [REDACTED] contribution to the publication. However, there was a clear failure to communicate with [REDACTED] concerning [REDACTED] authorship status. |
| c. Proven by preponderance of evidence | Not applicable |

Advice

As discussed in *EPA's Best Practices for Designating Authorship*, most authorship disputes can be avoided or resolved with continual open and frank discussions about responsibilities and contributions. It is recognized that authorship and authorship order may change over the course of a project to better reflect the actual contributions of the contributors. As outlined in *EPA's Best Practices for Designating Authorship* (Chapter 4):

“Authorship and authorship order should be a collective decision by all project contributors under the leadership of the primary author. In general, project contributors should strive for a consensus decision on authorship and authorship order. If a consensus cannot be reached among contributors, the issue(s) should be raised to the primary author’s immediate supervisor as the first recourse. The supervisor in the primary author’s chain of command who does not have a conflict of interest should facilitate resolution of the issue. Attempts should be made to resolve outstanding issues at the lowest level of authority. Any resolution to an authorship dispute must be consistent with EPA’s Scientific Integrity Policy. If attempts to resolve the issue(s) fail, the project contributor may contact EPA’s Scientific Integrity Official. Authorship disputes should be resolved before the work product is submitted for EPA clearance.”

In this case, better communication may have averted this allegation. Every effort should be made to communicate with all contributors involved in the development of any EPA product, including journal manuscripts, during the various stages of product development. This includes contributors who move to new organizations or leave the agency altogether. In this case, a discussion with [REDACTED]

██████ about █████ role and designation on the manuscript should have taken place when █████ left the group and/or when █████ name was removed from the author list of the article. If the relationship between coauthors was in any way strained, it would have been appropriate for a supervisor to facilitate communication. The Scientific Integrity Program advises that █████ be included in any pertinent discussions regarding the second (unpublished) manuscript.

It is the responsibility of every EPA employee to conduct, utilize, and communicate science with honesty, integrity, and transparency. *EPA's Best Practices for Designating Authorship* is a useful resource for all agency employees. The Scientific Integrity Program advises that the leadership of OAQPS ensure that these best practices are routinely applied across OAQPS. The Scientific Integrity Program is available to provide training or advice concerning these best practices.

Summary for Annual Report

A scientist alleged that his/her name was inappropriately excluded from the authorship list of a journal article.

Summary: The Scientific Integrity Program found the allegation to be unsubstantiated but did determine there were failures in communication with the scientist. It was recommended that better communication practices be employed and that the program office adopt the recommendations outlined in *EPA's Best Practices for Designating Authorship*, available at <https://www.epa.gov/osa/authorship-best-practices>.